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Sur la Géologie des Environs de Bex, par E. Renevier, professeur. (Ext. des Actes de la 60^e Session de la Soc. Helv. des Sc. Nat. Bex. Août 1877.) 8vo, pp. 3. From the author.

Structure Geologique du Massif du Simplon apropos du Tunnel Projeté, par E. Renevier. (From the Bulletin de Société Vaudoise des Sciences Naturelles. Vol. xv, No. 79.) Lausanne, Librarie Rouge et Dubois, 1878. 8vo, pp. 281–304. (Plates 20–21.) From the author.

Sur quelques Batraciens de Chine, par M. H. E. Sauvage. (Ext. du Bull. de la Soc. Philomathique de Paris 7^e série t I^{er}, No. 3. 12 Mai, 1877.) 8vo, pp. 4. From the author.

Sur les écailles de ligne latérale chez Sciénoides, par M. H. E. Sauvage. (Ext. du Bull. de la Soc. Philomathique de Paris 7^e série. Juillet, 1877.) With note sur les Sparus desfontainii, etc. Par le même. 8vo, pp. 12. From the author.

Remarques sur la classification et les affinities réciproques des Chéloniens, par M. Leon Vaillant. (Ext. du Bull. Soc. Philomathique de Paris, 7^e série, t I^{er}, No. 2. 10 Mars, 1877.) 8vo, pp. 5, planche 54. From the author.

A List of the Species of the Tribe Aphidini, Family Aphidæ, found in the United States, which have been heretofore named, with descriptions of some new species. By Cyrus Thomas, Ph.D. (Ext. Bull. No. 2, Ill. State Lab. of Nat. Hist.) Printed Dec. 13, 1877. 8vo, pp. 16. From the author.

Notes on the Natural History of Fort Macon, N. C., and vicinity. (No. 4.) By Dr. Elliott Coues and Dr. H. C. Yarrow. (Ext. Proc. Acad. Nat. Sci., Phila., 1878.) 8vo, pp. 21–28. From the authors.

The Electric Constitution of our Solar System. By Jacob Ennis. (From the Proceedings of the Academy of Natural Sciences, Phila., 1878.) 8vo, pp. 19. From the author.

On the identity of certain supposed species of Sigillaria with Sigillaria lepidodendrifolia Brogniart. By Herman L. Fairchild. (From the Annals of the New York Academy of Sciences. Vol. i, No. 5.) 8vo. pp. 129–133, with a plate. From the author.

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GENERAL NOTES.

BOTANY.

THE MYCOLOGICAL FLORA OF MINNESOTA.—Dr. A. E. Johnson contributes to the Bulletin of the Minnesota Academy of Natural Sciences, an essay of a hundred pages on the fungi of that State. He has collected and determined 559 species all new to the State, two of which are new to science, and the report is the result of the examination of more than ten thousand specimens. The essay is mainly an enumeration of the species, and must prove of much assistance to local botanists, and though we are unable to pass a critical judgment on the quality of the work, it evidently reflects credit on the Society and State from which it emanates.

LIGNEOUS FLORA OF IOWA.—In a page reprinted from the *Valley Naturalist*, Prof. J. E. Todd gives a list of the trees and woody shrubs and vines of South-western Iowa, a region varying in altitude from about 1000 to 1300 feet above the sea, the prevailing soil being that of the loess.

ON THE GROWTH OF COCCULUS INDICUS.—I have noticed that the termini of the branches on a plant of *Cocculus indicus*, in the Horticultural Building in Fairmount Park, were coiled to the left about objects that came within reach. These terminal coils, which simulated tendrils in form, would, if straightened out, measure 6 to 8 inches inches in length. The buds upon them appeared to be aborted or rudimentary, and as soon as the coil was securely wound round its object of support, growth in a longitudinal direction in the branch in question seemed to cease; but below the proximal part of the coil, or that nearest the root, one of the fully developed buds would break and continue the ascending axis, which, when it had attained a length of 1 or 2 feet, would coil its terminus, and stop growing lengthwise as the branch had done from which it grew. This process seemed to be repeated indefinitely. The plant might be called a *terminal twiner*. Other menispermaceous plants seemed to have a similar tendency, though not so marked, and some were not very different in habit from ordinary twiners, as, for examples, *Menispermum canadense*. *Aristolochia*, it has *since* been discovered, exhibits in a slight degree a similar tendency.—*Jno. A. Ryder.*

BOTANICAL NEWS.—Francis Wolle concludes (*Bulletin* of the Torrey Botanical Club, April) that *Nostoc*, which has generally been considered a perfect plant, is not so, but the " matrix " of *Scytonema*, from which many forms of the latter genus are evolved. The paper is illustrated by a full page cut. In the *Botanical Gazette* Charles Mohr notices the foreign plants introduced into the Gulf States. Mr. R. Burgess records a case of natural radical grafting, " potting two plants of the deer's tongue and rat-tail Cactus, resulting in a profuse crop of the latter issuing from the extremity of the leaves of the former."

Trimen's *Journal of Botany* contains a notice of Rodier's second note on the spontaneous and regular movements of *Ceratophyllum demersum*. In general when examined at about six in the morning, a movement of torsion from left to right is proceeding; this then stops and gives place to a movement from right to left, which continues up to about 11 A. M., that is for about five hours; the experiments showed a mean of about 36° per hour, *i. e.*, of 180° or half the circumference during the whole time. The reverse torsion from left to right commences immediately the former ceases and goes on at the rate of about 12° an hour—one-third that of the morning; estimating its duration at 7½ hours, its amount is 90°, or one-half that of the morning. Tables are given of these results, and show that there is by no means complete regularity in the movements.

M. Rodier's observations were stopped in November by the plant passing into its winter state, in which its movements are almost entirely suspended. The elongation of the terminal buds ceases, the last verticils of leaves remain closely imbricated, and the latter become stiffly curved, thicker, and larger, with the air-cavities swollen and full of gas, at the same time the axis becomes thickened and pink and its cells are found to be crowded with starch and rounded. In short, we have here produced winter buds by which the plant is propagated. They are very easily detached from the old stems, and then readily float, and are carried by stream.

S. E. Cassino, Salem, Mass., announces the publication, June 10th, of Ferns in their Homes and Ours, by John Robinson, to be illustrated with eight chromo-lithographs of rare ferns with other illustrations.

ZOÖLOGY.[1]

CHANGE BY ARTIFICIAL MEANS OF A LAND TO AN AQUATIC SALAMANDER.—Some very interesting experiments have recently been made by Madame von Chauvin, regarding the change, by artificial means, in the Alpine salamander of a land to an aquatic life. From a translation of the paper in *Nature*, we take the following account, often word for word. The former success of Madame von Chauvin in inducing the development of *Amblystoma* from the Mexican axolotl by gradually accustoming it to live in air, induced her to attempt to change the habits of *Salamandra atra*. This is an ovo-vipiparous species, and although its young possess large gills while within the body of the mother, they are born to begin a land-life immediately, while *Salamandra maculata* brings forth its young with gills, and they live for some time in water before taking to land. The problem to be solved was whether the young of the black salamander, taken from the mother before the normal time of birth, and placed in water under favorable conditions, could become adapted to an aquatic life. Out of twenty-three larvæ of the Alpine salamander (*S. atra*) one, unlike the rest, appeared at ease when placed in water and made no attempt to get out of it, and was fed regularly. The gills, too delicate and thin for life in the water even, dropped off by the third day, but soon a second smaller set of gill-fringes grew out, which appeared to perform the work of respiration perfectly; the creature remained completely beneath the surface of the water, without ever coming up to breathe air. While the new gills were being developed the larva remained at rest as if dead, only eating the earthworms when they were offered. When the gills had attained a length of 2.2 mm., the larva became lively, and concurrent with this was the completion of another transformation. The delicate and transparent swimming membrane of the tail was lost, and replaced by a less transparent and stouter one, of greater dimensions. Finally, after six weeks' residence in the water, the skin began to be shed. Fourteen weeks after having been placed in the water, when six centimetres long, the gills began to shrink, and the tail to assume a rounder form, and in three days the skin was shed, revealing the normal black and wrinkled skin of the land salamander. At last it crawled out of the water, and on the

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[1] The departments of Ornithology and Mammalogy are conducted by Dr. ELLIOTT COUES, U. S. A.